



# ***CHAOS*** AMPLIFIERS **Service Manual**

**MODEL: CH3000D**

## **SPECIFICATIONS**

Maximum power output (2 Ohms): 2200W x 1ch

RMS power Output: 1200W x 1ch

Bridged Power Output: 3000W x 1ch

Frequency response: 20 - 300Hz

S/N Ratio: 103dB

Low Pass Crossover (Variable) 20Hz-250Hz

Power Source Voltage: 14.4V

Ground: Negative

Power consumption: 25A(with 125Wx2 rated output)

External dimensions: 300(W)x65(H)x406(D)mm

# To engineers in charge of repair or inspection of our products.

Before repair or inspection, make sure to follow the instructions so that customers and Engineers in charge of repair or inspection can avoid suffering any risk or injury.

## 1. Use specified parts.

The system uses parts with special safety features against fire and voltage. Use only parts with equivalent characteristics when replacing them. The use of unspecified parts shall be regarded as remodeling for which we shall not be liable. The onus of product liability (PL) shall not be our responsibility in cases where an accident or failure is as a result of unspecified parts being used.

2. Place the parts and wiring back in their original positions after replacement or re-wiring. For proper circuit construction, use of insulation tubes, bonding, gaps to PCB, etc, is involved. The wiring connection and routing to the PWB are specially planned using clamps to keep away from heated and high voltage parts. Ensure that they are placed back in their original positions after repair or inspection. If extended damage is caused due to negligence during repair, the legal responsibility shall be with the repairing company.

3. Check for safety after repair. Check that the screws, parts and wires are put back securely in their original position after repair. Ensure for safety reasons there is no possibility of secondary problems around the repaired spots. If extended damage is caused due to negligence of repair, the legal responsibility shall be with the repairing company.

4. Caution in removal and making wiring connection to the parts for the automobile. Disconnect the battery terminal after turning the ignition key off. If wrong wiring connections are made with the battery connected, a short circuit and/or fire may occur. If extensive damage is caused due to negligence of repair, the legal responsibility shall be with the repairing company.

## 5. Cautions regarding chips.

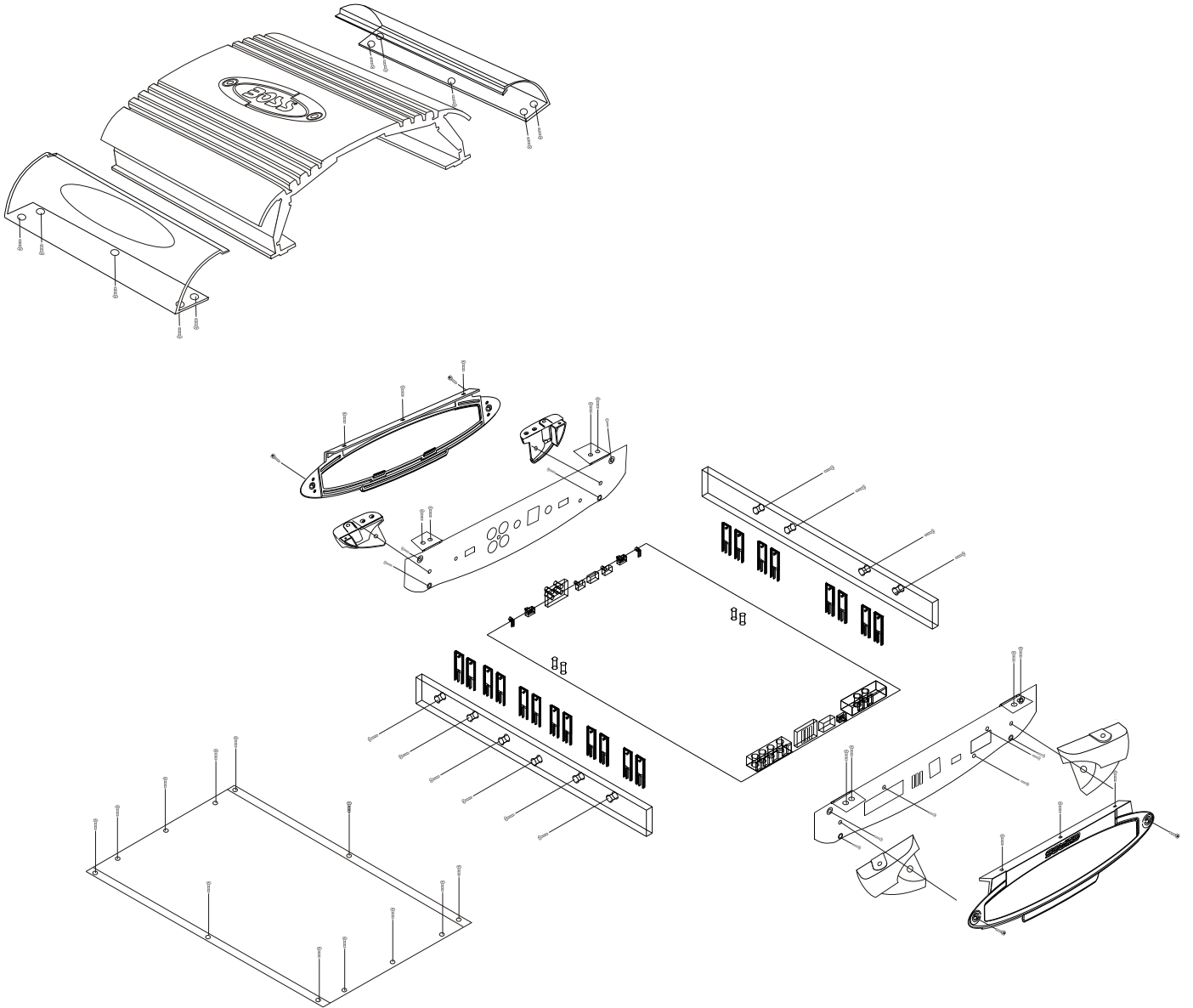
Do not reuse removed chips even when no abnormality is observed in their appearance. Always replace them with new ones. (The chip parts include resistors, capacitors, diodes, transistors, etc). The negative pole of tantalum capacitors is highly susceptible to heat, so use special care when replacing them and check the operation afterwards.

## 6. Cautions in handling flexible PCB

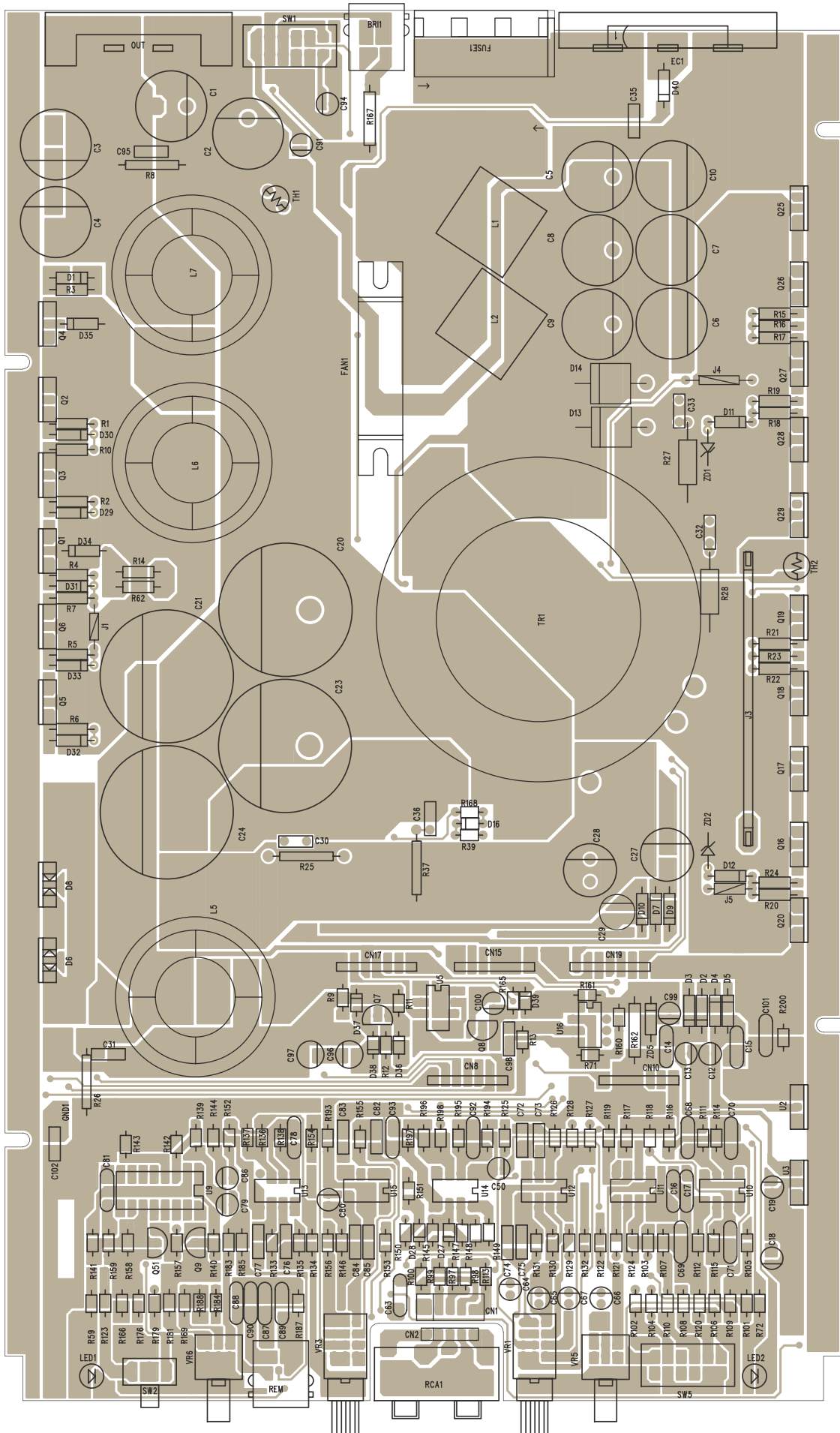
Before working with a soldering iron, make sure that the iron tip temperature is around 270... Take care not to apply the iron tip repeatedly (more than three times) to the same patterns. Also take care not to apply the tip with force.

7. Turn the unit OFF during disassembly and parts replacement. Recheck all work before you apply power to the unit.

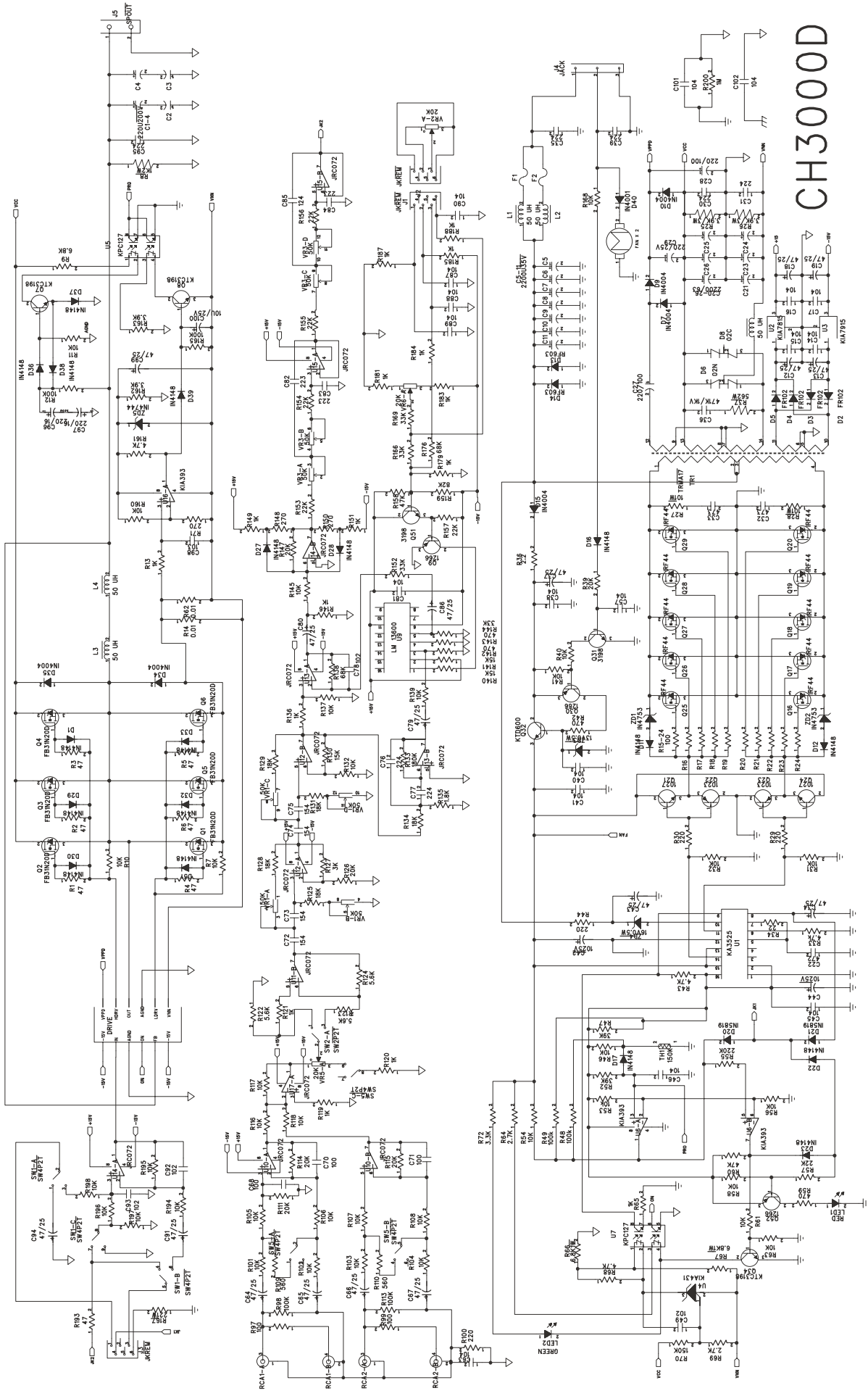
# EXPLODED VEIW



# PRINTED CIRCUIT BOARD - 1

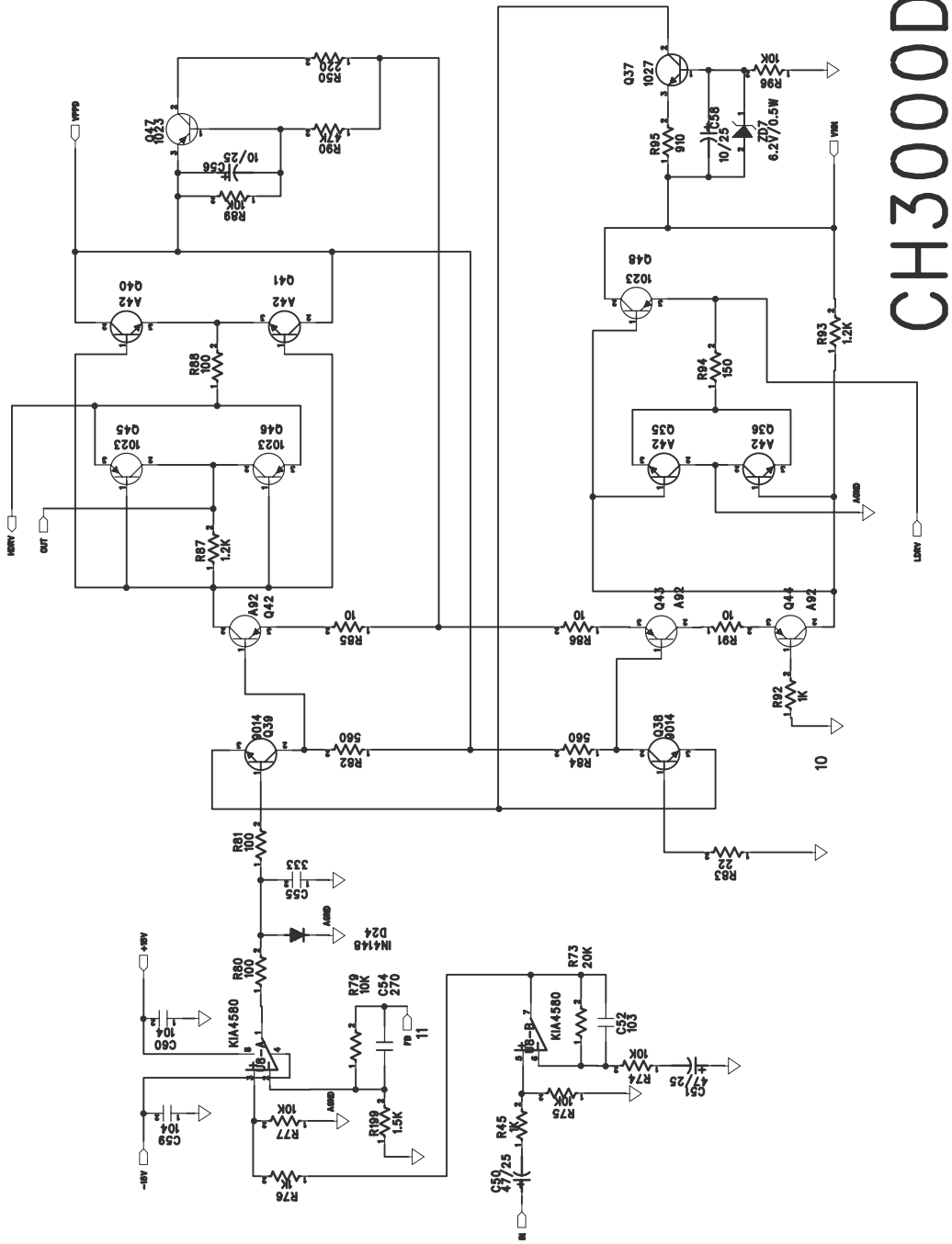


# CIRCUIT DIAGRAM 1



CH3000

# CIRCUIT DIAGRAM 2



# CH3000D

# PARTS LIST - 1

Part Number	desc	Location	qty
CR-40091X0-VOS00	RCA Jack		1
CW-50000X0-V0025	High Input Jack		1
CW-760X85X-RGG25	7 pine connection Jack		5
EC-B4102X0-Z2675	Capacitor 102J	C49	1
EC-B4103X0-Z2675	Capacitor 103J	C52,98	2
EC-B4124X0-Z2675	Capacitor 124J	C85	1
EC-B4154X0-Z2675	Capacitor 154J	C72~75	4
EC-B4223X0-Z2675	Capacitor 223J	C82,83,84	3
EC-B4224X0-Z2675	Capacitor 224J	C30~31,35,76,77,95,102	7
EC-B4333X0-Z2675	Capacitor 333J	C55	1
EC-B4472X0-Z2675	Capacitor 472J	C22	1
EC-B4473X0-Z2675	Capacitor 473J	C32,33	2
EC-CX471X0-J60B6	C Cap 470PF/1KV	C36	1
EC-D4104X0-H4020	Cap 0.1UF50V	C14~17,38,40,41,45~47,57,59,60,63,81,87~90,101	20
EC-E2107X0-M50A1	E Cap 100UF/16	C48	1
EC-E2227X0-M63A1	E Cap 220UF/16	C96,97	2
EC-E3106X0-M50A1	E Cap 10UF/25V	C56,58,42,44,100	5
EC-E3227X0-M80A3	E Cap 220UF/25	C29	1
EC-E3476X0-M50A1	E Cap 47UF/25	C18,19,34,37,43,50,51,64~67,79,80,86,91,94,99	17
EC-E4476X0-M50A1	E Cap 47UF/50V	C12,13	2
EC-E6228X0-MA3B5	E Cap 2200/35V	C5~10	6
EC-E8338X0-MC0C0	E Cap 3300UF/80V	C20,21,23,24	4
EC-EA227X0-MA3B5	E Cap 220UF/100V	C27,28	2
EC-EB227X0-MA8B7	E Cap 220UF/200V	C1~4	4
EC-R4102T0-K1435	Tubular Cap 102K	C78,92~93	3
EC-R5221X0-Z1435	Tubular Cap 220P	C54,68~71	5
EC-R5470X0-Z1435	Tubular Cap 47P	C53	1
ED-R4001X0-H0000	Diode IN-4001	D40	1
ED-R4004X0-H0000	Diode IN-4004	D7,9,10,15,34,35	6
ED-R5819X0-H0000	Diode 1N5819	D20,21	2
ED-RFMG22R-H0000	Diode FMG22R	D6	1
ED-RFMG22S-H0000	Diode FMG22S	D8	1
ED-RFR1020-H0000	Diode FR102	D2~5	4
ED-RFR6040-H0000	Diode FR604	D13,14	2
ED-S4148X0-H0000	Diode IN-4148	D1,11~12,16~19,22~25,27~33,36~39	22

## PARTS LIST - 2

ED-Z06V2X0-H0500	Diode 6.2V 0.5W	ZD6	1
ED-Z13V0X0-H0500	Diode 13V 0.5W	ZD3	1
ED-Z15VXX0-H4744	ZENER IN4744	ZD5	1
ED-Z16V0X0-H0500	Diode 16V 0.5W	ZD4	1
ED-Z4753X0-H1000	Diode 1N4753-36V	ZD1,2	2
EE-C23X5X0-10302	LED Red 3MM	LED1	1
EE-C53X5X0-10302	LED Green 3MM	LED2	1
EF-COCOAX0-XXXXX	Fan 30X30X10		1
EO-CG423X0-HXXX4	coil 42.3UH	L5	1
EO-CG525X0-HXXX2	coil 52.5UH	L6,7	2
EO-CMA5280-H0023	Choke coil	L1,2	2
EO-IM7185D-H000A	Transformer		1
ER-HG153X0-HXXXX	THERMISTOR 150K	TH1,2	2
ER-MG102X0-HC0XX	Resistor 1K 3W	R8	1
ER-MG392X0-HC0XX	Resistor 3.9K 3W	R25,26	2
ER-MG560X0-HC0XX	Resistor 56 3W	R37	1
ER-OG000X0-H2526	Resistor 0 1/4W	J1,4,5	3
ER-OG022X0-H2526	Resistor 2.2 1/4W	R36	1
ER-OG100X0-H1214	Resistor 10 1/8W	R85,86,91	3
ER-OG100X0-HA04C	Resistor 10 1W	R27,28	2
ER-OG101X0-H1214	Resistor 100 1/8W	R15~24,80,81,83,88,97,99	16
ER-OG102X0-H1214	Resistor 1K 1/8W	R13,45,65,76,92,95,119~121,136,146,149,151,179,181,183~185,187~188	20
ER-OG103X0-H1214	Resistor 10K 1/8W	R7,10,11,31,32,40,41,46,53,54,56~58,61,63,74,75,77,79,89,96, 101~108,116~118,132,137,139,145,160,168,194~198	43
ER-OG104X0-H1214	Resistor 100K 1/8W	R12,48,49,78,98,113,165	7
ER-OG105X0-H1214	Resistor 1M 1/8W	R200	1
ER-OG122X0-H1214	Resistor 1.2K 1/8W	R87,93	2
ER-OG151X0-H1214	Resistor 150 1/8W	R94	1
ER-OG152X0-H1214	Resistor 1.5K 1/8W	R199	1
ER-OG153X0-H1214	Resistor 15K 1/8W	R130,140,141	3
ER-OG154X0-H1214	Resistor 150K 1/8W	R70	1
ER-OG182X0-H1214	Resistor 1.8K 1/8W	R135	1
ER-OG183X0-H1214	Resistor 18K 1/8W	R125,128,129,131,134,47	6
ER-OG184X0-H1214	Resistor 180K 1/8W	R133	1
ER-OG203X0-H1214	Resistor 20K 1/8W	R39,73,111~112,114~115,126,147	8
ER-OG220X0-H1214	Resistor 22 1/8W	R34	1
ER-OG220X0-HA04C	Resistor 22 1W	R167	1



## PARTS LIST - 3

ER-OG221X0-H1214	Resistor 220 1/8W	R50,29,30,44,100	5
ER-OG223X0-H1214	Resistor 22K 1/8W	R153~157	5
ER-OG224X0-H1214	Resistor 220K 1/8W	R55	1
ER-OG271X0-H1214	Resistor 270 1/8W	R71,148,150	3
ER-OG272X0-H1214	Resistor 2.7K 1/8W	R64,69	2
ER-OG302X0-H1214	Resistor 3K 1/8W	R127	1
ER-OG332X0-H1214	Resistor 3.3K 1/8W	R72	1
ER-OG333X0-H1214	Resistor 33K 1/8W	R144,152,166,169	4
ER-OG392X0-HA04C	Resistor 3.9K 1W	R162	1
ER-OG393X0-H1214	Resistor 39K 1/8W	R52	1
ER-OG470X0-H1214	Resistor 47 1/8W	R1~6,R193	7
ER-OG471X0-H1214	Resistor 470 1/8W	R42,59,142,143	4
ER-OG472X0-H1214	Resistor 4.7K 1/8W	R33,43,60,68,161	5
ER-OG473X0-H1214	Resistor 47K 1/8W	R90,158	2
ER-OG561X0-H1214	Resistor 560 1/8W	R82,84,109,110	4
ER-OG562X0-H1214	Resistor 5.6K 1/8W	R122~124	3
ER-OG682X0-H1214	Resistor 6.8K 1/8W	R9,163	2
ER-OG682X0-H2526	Resistor 6.8K 1/4W	R66,67	2
ER-OG683X0-H1214	Resistor 68K 1/8W	R138,176	2
ER-OG823X0-H1214	Resistor 82K 1/8W	R159	1
ER-R0000X0-15XXX	Resistor (10MK)	R14,62	2
ES-S2219X0-H0006	Switch JSS2219	SW2	1
ES-S42F010-H0016	Switch SK42F01	SW1,5	2
ET-B31N20D-X0000	Transistor IRFB31N20D	Q1~6	6
ET-C1023X0-PY000	Transistor KTA1023-Y	Q22,23,47	3
ET-C1027X0-NY000	Transistor KTC1027-Y	Q21,24,37~39	5
ET-C1266X0-PY000	Transistor A1266Y	Q9,30,52	3
ET-C3198K0-NY000	Transistor KTC3198-Y	Q7,8,31,34,51	5
ET-CA42XX0-N0000	Transistor MPSA42	Q35,36,40,41	4
ET-CA56XX0-P0000	Transistor MPSA56-AT	Q45,46,48,49	4
ET-CA92XX0-P0000	Transistor MPSA92	Q42~44	3
ET-CD600X0-N0000	Transistor KTD600-KY	Q32	1
ET-FFZ44X0-X0000	Transistor IRFZ 44N	Q16~20,q25~29	10
ET-KIA431A-X0000	Transistor KIA431A-AT	U4	1
II-13700D0-H0016	IC NJM-13700D	U9	1
II-3525AX0-V0016	IC SG3525AN	U1	1
II-393XXX0-H0008	IC KIA-393P	U6,16	2

## PARTS LIST - 4

II-45580B0-V0008	IC JRC-4558D	U10~15	6
II-4565DX0-H0008	IC JRC-4565D	U8	1
II-521-2X0-H0008	IC TLP521-2	U5,7	2
II-78150X0-V0003	IC KA7815TU	U3	1
II-79150X0-V0003	IC KA7915-TU	U2	1
VR-BN203X1-H0A26	VR 20KBX2	VR5,6	2
VR-BN503X0-H0A2C	VR 50KBX4	VR1,3	2